



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/468,471	12/21/1999	VINCENT DIVINO, JR.	THOX:0021--1	3676

27405 7590 05/05/2004

THEROX, INC.  
2400 MICHELSON DRIVE  
IRVINE, CA 92612

EXAMINER

BIANCO, PATRICIA

ART UNIT	PAPER NUMBER
----------	--------------

3762

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/468,471

Applicant(s)

DIVINO, JR. ET AL.

Examiner

Patricia M Bianco

Art Unit

3762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 41-50 and 52-78 is/are pending in the application.
- 4a) Of the above claim(s) 56-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-50, 52-55 and 68-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Detailed Action.

Art Unit: 3762

**DETAILED ACTION**

The finality of the previous Office action is hereby withdrawn pursuant to 37 CFR 1.129(a). Applicant's after final amendment filed on 3/15/04 has been entered.

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 41, 44-50, 55, 68-74 & 76 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 28/27/26/25 of U.S. Patent No. **6,565,807 B1**. Although the conflicting claims are not identical, they are not patentably distinct from each other because the application claims are a broader recitation of the invention than that of the issued patent, including all of the same limitations. The claims of the application claim a method for forming a gas-enriched fluid by providing a mixing chamber, delivering a first fluid to the chamber such that the fluid enters the chamber and flows vortically within said chamber, and delivering a second fluid having a liquid

Art Unit: 3762

phase supersaturated with gas to the chamber to mix with the first fluid and form the gas-enriched fluid. The first fluid is then claimed to be blood, and the gas supersaturating the second liquid is claimed to be oxygen. The chamber is also further claimed to be pressurized. The patent claims recite an extracorporeal blood oxygenation method wherein the blood is mixed with an oxygen-supersaturated solution. The patent claims further claim that the blood enters the chamber and flows in a vortically. The method is claimed to be a liquid-to-liquid assembly and, therefore, the oxygen-supersaturated solution delivered to the chamber is a fluid that has a liquid phase supersaturated with gas, in this case the gas is oxygen. Further, the patent claims that the chamber is pressurized to be at a pressure greater than about 500 p.s.i. Since a broad interpretation of the patent '807 claims includes the method of the application claims, if a patent was to grant on the pending claims of this application applicant would be granted an unlawful extension of protection beyond the years of the '807 patent. With respect to claim 46 requiring that the fluid be saline, it would have been obvious at the time of the invention to modify the patent claims to require saline, since it is well known that saline is widely used in medical procedures.

Claims 41-45, 4750 & 68 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. **6,602,468 B2**. Although the conflicting claims are not identical, they are not patentably distinct from each other because the application claims are a broader recitation of the invention than that of the issued patent, including all of

Art Unit: 3762

the same limitations. The claims of the application claim a method for forming a gas-enriched fluid by providing a mixing chamber, delivering a first fluid to the chamber such that the fluid enters the chamber and flows vortically within said chamber, and delivering a second fluid having a liquid phase supersaturated with gas to the chamber to mix with the first fluid and form the gas-enriched fluid. The first fluid is then claimed to be blood, and the gas supersaturating the second liquid is claimed to be oxygen. The patent claims further claim that the blood enters the chamber and flows in a vortically. The method is claimed to be a liquid-to-liquid assembly and, therefore, the oxygen-supersaturated solution delivered to the chamber is a fluid that has a liquid phase supersaturated with gas, in this case the gas is oxygen. Since a broad interpretation of the patent '807 claims includes the method of the application claims, if a patent was to grant on the pending claims of this application applicant would be granted an unlawful extension of protection beyond the years of the '468 patent. With respect to claim 46 requiring that the fluid be saline, it would have been obvious at the time of the invention to modify the patent claims to require saline, since it is well known that saline is widely used in medical procedures.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gordon et al. (6,365,190 B1) discloses a system for mixing two components comprising a mixing chamber, wherein the mixing chamber has feed tubes positioned to facilitate vortical flow within the chamber.

Art Unit: 3762

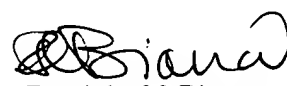
Myrick et al. (6,613,280 B2) discloses an extracorporeal system and method for enriching a fluid, such as blood, with a gas, comprising a mixing chamber, wherein the mixing chamber has a fluid inlet positioned to facilitate vortical flow of the fluid within the chamber.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia M Bianco whose telephone number is (703) 305-1482. The examiner can normally be reached on Monday to Friday 9:00-6:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (703) 308-5181. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 29<sup>th</sup>, 2004

  
Patricia M Bianco  
Primary Examiner